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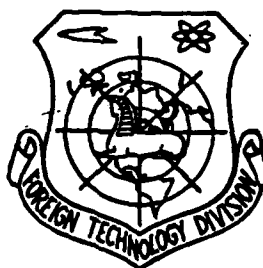
FOREIGN TECHNOLOGY DIVISION



ATTACKING PROBLEMS WITHOUT FEAR OF THE DIFFICULTIES

by

Li Tianjun



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By: Li Tianjun

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PREPARED BY:

TRANSLATION DIVISION
FOREIGN TECHNOLOGY DIVISION
WP.AFB, OHIO.

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ATTACKING PROBLEMS WITHOUT FEAR OF THE DIFFICULTIES

by Li Tianjun, reported by Zhang Zongshou

Comrade Dong Shixiao, an instructor at the Chengdu Institute of Telecommunications Engineering, left the armed forces in 1962. He transferred to civilian work in a locality and became engaged in scientific research work. Although he had left the armed forces, in his heart he still constantly thought about the building of the army. While working at a certain scientific research laboratory, he and some other comrades succeeded in developing, one after another, three communications devices which have made a definite contribution to the modernization of national defense.

In 1972, Dong transferred from the scientific research laboratory to a job at the Chengdu Institute of Telecommunications Engineering. He teaches and does scientific research. In 1975, while directing students doing laser atmospheric transmission experiments, he and two professors, Feng Zhichao and Qiu Mingxin, observed that the transmission characteristics of a CO₂ laser are quite good. He felt that if they were able to make a laser atmospheric communications device, how good that would be! After Dong Shixiao made known to the leadership what he had in mind, he obtained the vigorous support of the Party committee and decided that this research work would be carried out by his organization of several comrades.

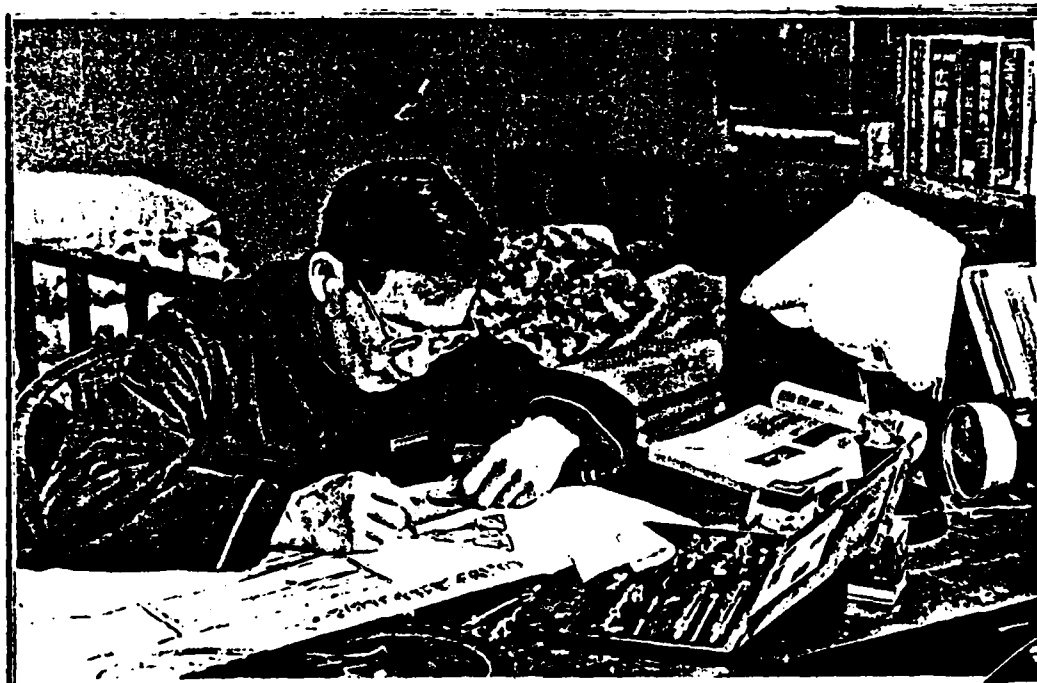
Dong Shixiao had not previously done any research in this new

laser communication technology and in order to overcome this difficulty he spent his own money and bought over 150 books pertaining to the field of lasers. He researched a large amount of Chinese and foreign language material, took down nearly one million words of reading notes, and step by step mastered the scientific knowledge of laser communications. After some preparation work, along with the assistance of Feng Zhichao, he began development work on a CO₂ laser communications device and, furthermore, the first conversation experiments achieved success.

These experiments were conducted in clear, bright weather, but how would the needs of actual combat be integrated, ensuring that communications would go through under a variety of conditions? Dong Shixiao and the entire group of comrades were not afraid of hard work and overcame incredible odds. They searched for "light specks" and took measurements of transmission data under different weather conditions such as in fog, rain, snow, and clear weather, making one improvement after another. Then, just at the time the "gang of four" was running amok, Dong and his comrades, without fear of being labeled or having the boom lowered on them, but under the leadership of the Party committee, stood firm and unmoving, and did a good job on this research. Dong Shixiao, together with Comrades Qiu Mingxin and Hu Yu, after several years of fighting bravely, finally convincingly overcame the obstacles and with the energetic assistance of Chengdu Radio Factory Two, succeeded in developing a CO₂ laser communications device with constant temperature detection. In actual tests conducted at a distance of 15.8 km, communication was very good. This laser communications device has the following advantages: the laser beam scatter angle is small, the optical information is concentrated and propagated within a small space, and it is an invisible infrared light beam. Consequently, security is good, it is not susceptible to interference from other radio waves, and it has a relatively good fog penetration and haze penetration ability. It can be used as a means of communications between islands, between border sentry posts and for combat emergencies.

Presently, Dong Shixiao and his entire group of comrades are

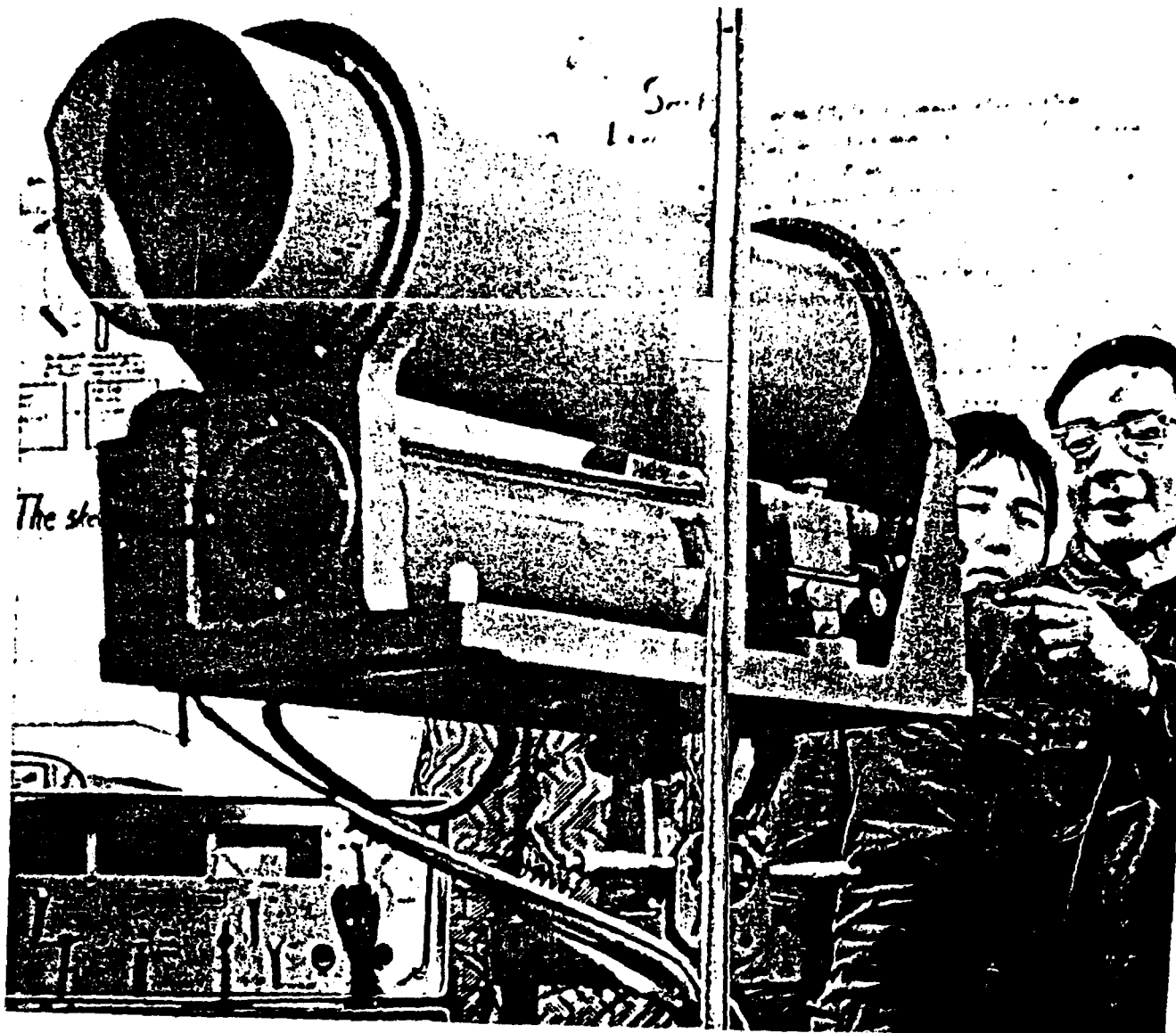
continuing their efforts and have decided to attack new problems, to scale new heights, and to strive for the modernization of national defense communications.



A soldier transferred to civilian work, Instructor Dong Shixiao of the Chengdu Institute of Telecommunications Engineering meticulously draws a sketch of the laser communications device.



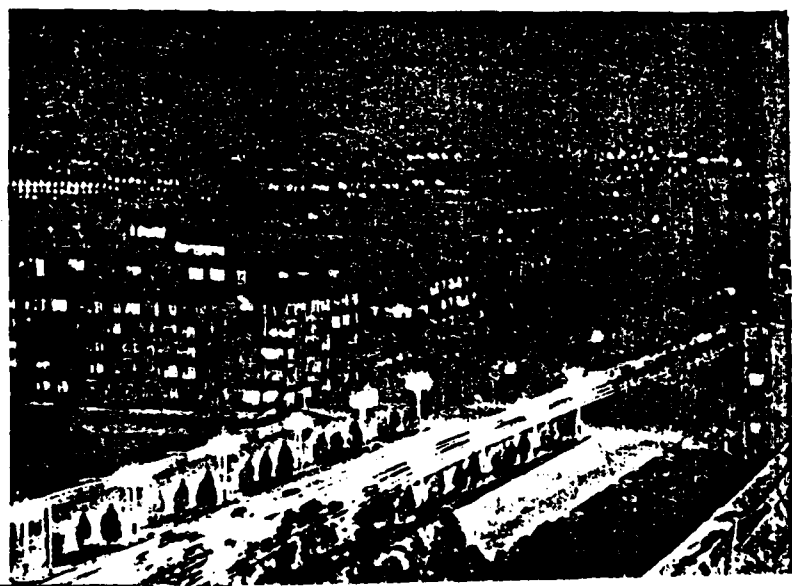
Photograph of Dong Shixiao at the time he was in the armed forces



Dong Shixiao describes to students the function and principles of the CO₂ laser communications device



Together they study the laser communications project



Dong Shixiao and Comrade Su Yunzhen doing field measurement of "light specks". They obtain reliable data for development of the laser communications device



Dong Shixiao and Comrade Feng Zhichao brief army communications personnel on the use of the use of the laser communications device

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